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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,080	02/21/2002	Dong Hee Lee	SEM-0003	2344

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Daniel F. Drexler
55 Griffin South Road
Bloomfield, CT 06002

EXAMINER

DESIR, PIERRE LOUIS

ART UNIT	PAPER NUMBER
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2681

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,080

Applicant(s)

LEE, DONG HEE

Examiner

Pierre-Louis Desir

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02/21/2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/21/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fijten et al. (Fijten), U.S. Patent No. 6113440.

Regarding claim 1, Fijten discloses a battery connector for a mobile phone, installed in a main body of the mobile phone and contacting a battery terminal to supply power to a printed circuit board (PCB) of the mobile phone (see fig. 1, col. 2, lines 61-65), the battery connector comprising: a body having a plurality of plunger housings (i.e. Fijten discloses a body having passages; one skill in the art would immediately envision that plunger housings can be interpreted as passages) (see fig. 1, col. 2, lines 65-66); a plunger slidably installed in each of the plurality of plunger housings of the body (i.e. Fijten discloses a contact which is inherently slid and arranged in each passage) (see fig. 1, col. 3, lines 1-2).

Although Fijten discloses a battery connector as disclosed above and comprising a base cover member (i.e. contact face), Fijten fails to specifically disclose a base cover member having a cylindrical connection part fitted in a lower end of each of the plurality of plunger housings, a bottom surface of the base cover member adhered to the PCB by soldering and made of conductive material; and a spring biasing the plunger in the plunger housing against the bottom of the base cover member.

However, Fijten discloses a battery connector wherein the contact is produced from sheet-metal by stamping and forming, and has a connection region for connecting to a PCB, and a contacting region for contacting the contact face of the electronic component; and, a spring region which is arranged between the connecting region and the contacting region. The spring region discloses by Fijten resiliently connects the connecting region to the contacting region, and (spring region) is guided by sidewalls of the contact-receiving housing (see col. 3, lines 2-14). On skill in the art would immediately envision that the spring has the same functional characteristic as the spring region, and that the contact face/base member allows electrical connection; therefore, the contact face has to be made of conductive material. Furthermore, one skill in the art would immediately envision the parallel characteristics of the claimed invention and the battery connector disclosed by Fijten.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fijten's battery connector such that the contact face (i.e. base cover) could have a cylindrical connection part fitted in accordance with the passage because such modification would have been considered a blunt or mere design consideration which fails to patentably distinguish over the prior art of Fijten.

Regarding claim 2, Fijten discloses a electric connector for providing electric connection between an electric power source (i.e. battery) (see col. 1, line 50) and an operating member (i.e. printed-circuit board) (see col. 1, line 56), comprising: a contact plunger for making contact with the electric power source (i.e. a contact element for making contact with the battery) (see col. 1, lines 53-54), the contact plunger being made of conductive material (i.e. contact is made from sheet-metal) (see col. 3, line 2); a

housing for slidably receiving the contact plunger (i.e. passage for receiving contact element) (see col. 1, line 52).

Although Fijten discloses a electrical connector as disclosed above, and comprising of a base member (i.e. contact face) which is disposed between the housing passage and the operating member (see fig. 2), Fijten fails to disclose that the base member is for fixing the housing at a selected region on the operating member, the base member being made of conductive material. Fijten also fails to disclose a spring disposed under the contact plunger inside the housing.

However, Fijten discloses that the contact face/base member is pressed onto the contact face to build up the necessary contact pressure (see col. 3, lines 21-31). Fijten also discloses a spring region, which is arranged between the connection region and the contacting region (see col. 3, lines 7-12). One skill in the art would immediately envision that because electrical connection is made, the contact face has to be made of conductive material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fijten's battery connector such that the base member/contact face, which is disposed between the housing passage and the operating member, is for fixing the housing at a selected region on the operating member because such modification would have been considered a blunt or mere design consideration which fails to patentably distinguish over the prior art of Fijten.

Regarding claim 3, Fijten discloses an electric connector as disclosed above (see claim 2 rejection above). Fijten also discloses electric connector, wherein the contact plunger (i.e. contact) comprises: a contact portion for making direct contact with the

electric power source (see col. 3, lines 3-7), the contact portion protruding from an upper opening of the housing (i.e. the contact is arranged in each passage) (see col. 3, lines 1-2); a guide portion (i.e. side walls) slidably disposed inside the housing (see col. 3, lines 10-14), the guide portion having contact with inner surface of the housing (see col. 3, lines 10-14).

Although Fijten discloses an electric connector as disclosed above, and comprising of a spring region (see col. 4, line 7), Fijten fails to disclose a spring fixing portion extending downward from a lower end of the guide portion, the spring fixing portion being disposed to be engaged with the spring.

However, Fijten discloses a spring region, which is arranged between the connecting region and the contacting region, and connects the connecting region resiliently to the contacting region, and is guided by sidewalls (see figs. 2, 4, 6, and 7, col. 3, lines).

Therefore, it would have been obvious to one of ordinary skill in the art to immediately envision that the spring fixing portion has the same functional characteristic as the spring region disclosed by Fijten. Also, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a spring fixing portion with Fijten's disclosure because such inclusion would have been considered a blunt or mere design consideration which fails to patentably distinguish over the prior art of Fijten.

Regarding claim 8, Fijten discloses an electric connector as disclosed above (see claim 2 rejection), wherein the electric power source is a battery having a terminal to be in contact with the contact plunger (see col. 2, lines 61-63).

Although Fijten discloses a electrical connector as disclosed above, and comprising of a base member (i.e. contact face) which is disposed between the housing passage and the operating member (see fig. 2), Fijten fails to disclose that the base member is for fixing the housing at a selected region on the operating member, the base member being made of conductive material. Fijten also fails to disclose a spring disposed under the contact plunger inside the housing.

However, Fijten discloses that the contact face/base member is pressed onto the contact face to build up the necessary contact pressure (see col. 3, lines 21-31). Fijten also discloses a spring region, which is arranged between the connection region and the contacting region (see col. 3, lines 7-12). One skill in the art would immediately envision that because electrical connection is made, the contact face has to be made of conductive material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fijten's battery connector such that the base member/contact face, which is disposed between the housing passage and the operating member, is for fixing the housing at a selected region on the operating member because such modification would have been considered a blunt or mere design consideration which fails to patentably distinguish over the prior art of Fijten.

Regarding claim 9, Fijten discloses an electrical connector (see claim 8 rejection), wherein the operating member is a circuit board for receiving electric power from the battery (col. 3, lines 3-7).

Although Fijten discloses a electrical connector as disclosed above, and comprising of a base member (i.e. contact face) which is disposed between the housing

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passage and the operating member (see fig. 2), Fijten fails to disclose that the base member is for fixing the housing at a selected region on the operating member, the base member being made of conductive material. Fijten also fails to disclose a spring disposed under the contact plunger inside the housing.

However, Fijten discloses that the contact face/base member is pressed onto the contact face to build up the necessary contact pressure (see col. 3, lines 21-31). Fijten also discloses a spring region, which is arranged between the connection region and the contacting region (see col. 3, lines 7-12). One skill in the art would immediately envision that because electrical connection is made, the contact face has to be made of conductive material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fijten's battery connector such that the base member/contact face, which is disposed between the housing passage and the operating member, is for fixing the housing at a selected region on the operating member because such modification would have been considered a blunt or mere design consideration which fails to patentably distinguish over the prior art of Fijten.

Regarding claim 10, Fijten discloses an electrical connector (see claim 8 rejection), wherein the electric connector, the circuit board, and the battery are included in a mobile phone (col. 2, lines 63-65).

Although Fijten discloses a electrical connector as disclosed above, and comprising of a base member (i.e. contact face) which is disposed between the housing passage and the operating member (see fig. 2), Fijten fails to disclose that the base member is for fixing the housing at a selected region on the operating member, the base

member being made of conductive material. Fijten also fails to disclose a spring disposed under the contact plunger inside the housing.

However, Fijten discloses that the contact face/base member is pressed onto the contact face to build up the necessary contact pressure (see col. 3, lines 21-31). Fijten also discloses a spring region, which is arranged between the connection region and the contacting region (see col. 3, lines 7-12). One skill in the art would immediately envision that because electrical connection is made, the contact face has to be made of conductive material.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Fijten's battery connector such that the base member/contact face, which is disposed between the housing passage and the operating member, is for fixing the housing at a selected region on the operating member because such modification would have been considered a blunt or mere design consideration which fails to patentably distinguish over the prior art of Fijten.

3. Claim 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fijten in view of Lok, U.S. Patent No. 6068519.

Regarding claim 4, Fijten discloses an electric connector as disclosed above (see claims 3 rejection).

Although Fijten discloses an electric connector as disclosed, Fijten fails to specifically disclose an electric connector, wherein the housing comprises a shoulder formed at the upper opening of the housing, the shoulder extending inward from edge of the upper opening of the housing; and a coupling groove formed on an outer surface at a

lower end of the housing, the coupling groove being disposed to be engaged with the base member.

However, Lok discloses an electric connector (i.e. battery connector) (see abstract), wherein the housing (i.e. slot) (see figs. 3-7, and col. 2, line 44) comprises a shoulder or an angle (i.e. recess) formed at the upper opening of the housing, the shoulder extending inward from edge of the upper opening of the housing (see figs. 3-7, and col. 2, lines 51-56). Lok also discloses a coupling groove formed on an outer surface of the housing, and the coupling groove is disposed to be engaged with base member (see figs. 2-4) (col. 2, lines 65-67, and col. 3, lines 1-9).

Fijten and Lok are analogous art because they are from the same field of endeavor.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the electric connector as disclosed with the characteristics of Lok's electric connector because such combination would strongly secure the cover to the base (see col. 1, lines 46-50).

Regarding claim 5 (see claim 4 rejection), Fijten discloses an electric connector as disclosed above. Although Fijten discloses a spring region, which connects the connecting region resiliently to the contacting region, and is guided by sidewalls (see figs. 2, 4, 6, and 7, col. 3, lines), Fijten fails to disclose an electric connector, wherein the shoulder makes direct contact with an upper edge of the guide portion of the contact plunger in response to elastic movement of the spring.

However, Lok discloses an electric connector where a shoulder (i.e. recess) is formed on the top wall of the cover (see col. 2, lines 51-56). Lok also discloses the engagement process of the recess (see col. 2, lines 51-64).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Fijten with the teachings of Lok in order to arrive at the claimed invention. The motivation for doing so would have been to good electrical contact in case of vibration.

Regarding claim 6, (see claim 4 rejection), Fijten discloses an electric connector as disclosed above.

Although Fijten discloses a spring region, which connects the connecting region resiliently to the contacting region, and is guided by sidewalls (see figs. 2, 4, 6, and 7, col. 3, lines), Fijten fails to disclose that the base member comprises a connection part formed at an upper end of the base member, the connection part having a cylindrical shape to be fitted with the coupling groove of the housing.

However Lok discloses that the base member comprises a connection part formed at an upper end of the base member, the connection part having shape to be fitted with the coupling groove of the housing (see col. 2, lines 25-29, 35-37, col. 2, lines 65-67, and col. 3, lines 1-9).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the electric connector as disclosed with the characteristics of Lok's electric connector because such combination would ensure good electrical contact in case of vibration.

Regarding claim 7, Fijten discloses an electrical connector (see claim 6 rejection) wherein the base member is soldered at the selected region on the operating member (see col. 1, lines 16-24).

Although Fijten discloses an electrical connector as disclosed above, as the claim depends on the preceding claim, Fijten fails to disclose that the base member comprises a connection part formed at an upper end of the base member, the connection part having a cylindrical shape to be fitted with the coupling groove of the housing.

However Lok discloses that the base member comprises a connection part formed at an upper end of the base member, the connection part having shape to be fitted with the coupling groove of the housing (see col. 2, lines 25-29, 35-37, col. 2, lines 65-67, and col. 3, lines 1-9).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the electric connector as disclosed with the characteristics of Lok's electric connector because such combination would ensure good electrical contact in case of vibration.

Conclusion


4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Douty et al., "Connector for a Battery," U.S. Patent No. 5518424.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Louis Desir whose telephone number is 703-605-4312. The examiner can normally be reached on Monday-Friday from 0800-1630.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Pierre-Louis Desir
AU 2681
10/29/2004

JEAN GELIN
PRIMARY EXAMINER

